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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,141	03/02/2004	Kevin I. Bertness	C382.12-0178	3178

27367 7590 10/05/2011

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ART UNIT	PAPER NUMBER
2858	

MAIL DATE	DELIVERY MODE
10/05/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/791,141	BERTNESS ET AL.	
	Examiner	Art Unit	
	AARON PIGGUSH	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *115-117 and 122-142* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *115-117 and 122-142* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/19/11*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 115-117, 122-132, 135-140, and 142 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gollomp (US 6,424,157) in view of Roberts (US 6,570,385).

With respect to claim 115, Gollomp discloses an apparatus for testing a charging system of an automotive vehicle, comprising: electrical connections configured to couple to a battery of the vehicle (col 6 ln 59-65 and seen in Fig. 7); a user input configured to receive a battery rating from an operator (col 7 ln 63 to col 8 ln 5); a display configured to display information to the operator (no. 128 in Fig. 7); and a microprocessor (no. 100 in Fig. 7) configured to: input rating information for the battery using the input and receive the rating information for the battery from the input (col 7 ln 63 to col 8 ln 5); perform a battery test on the battery through the electrical connections to the battery (col 4 ln 1-51 and col 5 ln 3-11); measure a dynamic parameter of the battery through the electrical connections to the battery (col 4 ln 1-49 and abstract); determine a condition of the battery based upon the measured dynamic parameter and the received rating, the battery test result indicative of a battery condition, the battery condition including a fully charged battery and a battery which is not fully charged (col 11 ln 15-60, no. s211-s273 in Fig. 2A and 2B and col 3 ln 49-57); instruct the operator to start an engine of the vehicle through the display

(this is implied because the operator knows that the engine must be started in order to carry out a starter test and col 6 ln 10-19); detect starting of the engine of the automotive vehicle by the operator based upon a voltage measured through the electrical connections to the battery (col 6 ln 37-53, s257-s273 in Fig. 2B, col 7 ln 48-53, and Fig. 2A/B and abstract); measure a starting voltage through the electrical connections to the battery during starting of the engine of the automotive vehicle (col 11 ln 40-50 and col 12 ln 1-12); and provide an output to the operator based upon the measured starting voltage and the battery test result, the microprocessor configured to provide a charge battery output to the operator through the display if the measured starting voltage is low relative to a threshold and the battery test result is indicative of a battery which is not fully charged (col 11 ln 15-60 and no. s211-s273 in Fig. 2A and 2B), providing a cranking voltage low output to the operator through the display if the measured starting voltage is low relative to a threshold and the battery test result is indicative of a fully charged battery (col 13 ln 50 to col 14 ln 19, no. s211-s273 in Fig. 2A and 2B, and Fig. 6), provide a cranking voltage normal output to the operator through the display if the starting voltage is normal relative to a threshold and the battery test result is indicative of a fully charged battery (col 13 ln 50 to col 14 ln 19, no. s211-s273 in Fig. 2A and 2B, and Fig. 6).

However, Gollomp does not expressly disclose prompting the operator to input information.

Roberts discloses a handheld tester for vehicles wherein the operator is prompted to input information (Fig. 11A-D and 12 and abstract), in order to help provide advanced warning for potential failures and allow the user to address the problems more quickly.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include prompting the operator to enter information in the device of Gollomp, as did Roberts, so that the proper state for testing can be attained which would give the most accurate measurements and results, which would help more properly diagnose the system.

With respect to claims 116 and 117, Gollomp discloses a user input configured to receive a rating standard selection which comprises a SAE standard (col 7 ln 63 to col 8 ln 5).

Concerning claims 118-121, please note the restriction requirement of 6/23/06 and the response filed 7/27/06, where claims 118-121 are drawn to a non-elected species.

With respect to claim 122-125, Gollomp discloses wherein the battery test is based upon conductance, resistance, impedance, and admittance (col 4 ln 1-27 and col 1 ln 40-42). Furthermore, it is implied that the other values (conductance, impedance, and admittance) would easily be calculated/used due to the fact that conductance is the reciprocal of resistance, impedance is the summation of resistance and reactance, and admittance is the reciprocal of impedance or the summation of conductance and susceptance. Therefore, all of those values are technically based on resistance, which the reference clearly discloses.

With respect to claim 126, Gollomp discloses wherein the one output comprises an output indicating and equivalent to "good battery", "good but recharge battery", "charge and retest battery", "replace battery", and "bad cell- replace battery" (col 20 ln 55 to col 21 ln 5, col 10 ln 21-40, and col 12 ln 14-19, especially note the various boxes in Fig. 2A-4D which have a "message" in them). Additionally, it is implied that if you are notified that you have a bad cell or a bad battery, then it needs to be replaced, or if you have a battery with a low SOC, then it needs to be charged and retested.

With respect to claim 127-129, Gollomp discloses measuring a voltage when an engine of the vehicle is revved and no load is applied (col 4 ln 1-49), when the engine is idle and a vehicle load is applied (col 4 ln 34-39 and col 12 ln 1-13), and when the engine is revved and a vehicle load is applied (col 4 ln 1-49). Please note that since the battery test is continuously running (i.e. SOC monitoring and updating, among other tests), it is implied that the battery test will measure a voltage when the engine is being revved (i.e. that will happen under normal operation), both with and without loads applied.

With respect to claims 130, 136, and 139, Gollomp discloses wherein DC voltages are recorded (col 4 ln 1-39 and Fig. 6) by use of a DC voltage sensor, however, does not expressly disclose measuring AC voltage ripple by use of an AC voltage ripple detector or wherein AC voltages are recorded.

Roberts discloses measuring AC voltage ripple by use of an AC voltage ripple detector (col 8 ln 64 to col 9 ln 28 and col 9 ln 65 to col 10 ln 15), and recording AC and DC voltages by use of sensors (col 9 ln 30-40 and col 10 ln 13-30), in order to provide a means to determine if the system has excessive ripple voltage and to provide sensed voltages which are used in the testing of the charging/starting system (to help determine any problems).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to measure AC voltage ripple and record AC voltages in the device of Gollomp, as did Roberts, so that problems caused by excessive voltage ripple can be prevented while also monitoring the AC and DC voltages (which provide information as to whether or not the rest of the system is operating at it's nominal condition).

With respect to claim 131, Gollomp does not expressly disclose including a user input configured to receive a temperature.

Roberts discloses a user input configured to receive temperature (col 15 ln 63 to col 16 ln 15), in order to provide temperature information to the system which will allow a proper analysis of the system (including the battery) because temperature can greatly alter the battery characteristics.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a user input for temperature in the device of Gollomp, as did Roberts, so that more accurate results can be attained with respect to the charging and cranking/starter systems (including the battery) which would help give a proper diagnosis of the system.

With respect to claim 132, Gollomp discloses wherein the battery test is a function of temperature (col 4 ln 1-33).

With respect to claim 135, Gollomp discloses an output selected from measured battery capacity (col 4 ln 1-30 and col 3 ln 49-53), voltage (col 4 ln 1-3), voltage during cranking (col 2 ln 35-45, Fig. 6, and col 13 ln 50-58), idle voltage (col 4 ln 34-39 and col 12 ln 1-13), and load voltage (col 4 ln 1-15).

With respect to claim 137, Gollomp discloses recording a voltage across the battery in memory (col 4 ln 1-51 and col 5 ln 40-47).

With respect to claim 138, Gollomp does not expressly disclose including a battery voltage scaling circuit, although, it could be implied that a scaling circuit exists in the device to provide the output of Fig. 6, wherein the large variations in voltage can be seen on a single screen.

Roberts discloses a battery voltage scaling circuit (col 11 ln 58 to col 12 ln 5), in order to provide proper scaling to offset any inaccuracies due to various types of connections or connection lengths being used.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art scaling circuit in the device of Gollomp, as did Roberts, so that inaccuracies due to long connections or different types of connection can be avoided.

With respect to claim 140, see the rejection of claims 127-129 above.

With respect to claim 142, Gollomp does not expressly disclose wherein the tester is portable in the manner that it is moveable between plurality of vehicles (but it does not appear that Gollomp explicitly states/shows that his tester is only used in one vehicle and not moveable). Please note that if the tester is implemented in the vehicle of Gollomp, it is reasonably interpreted as moveable due to the fact that the vehicle moves, also see Fig. 7. Additionally, it should be noted that it has been held that making an old device portable or movable without producing any new and unexpected result involves only routine skill in the art. *In re Lindberg*, 93 USPQ 23 (CCPA 1952).

Roberts discloses a handheld tester for vehicles that is portable (abstract), in order to provide a means for efficiently testing charging/starting systems (in multiple vehicles), which will in turn help provide advanced warning for potential failures and allow the user to address the problems more quickly.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to make the tester of Gollomp portable, as did Roberts, so that the tester could be used on

more than one vehicle (saving costs to the user), while also allowing the user to efficiently diagnose potential problems with the charging system.

3. Claims 133 and 134 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gollomp (US 6,424,157) and Roberts (US 6,570,385), and further in view of Parsonage (US 6,037,749).

With respect to claim 133, Gollomp does not expressly disclose wherein the microprocessor is configured to determine if surface charge exists on the battery.

Parsonage discloses wherein a microprocessor is configured to determine if surface charge exists on a battery (col 13 ln 59-61), in order to avoid improperly testing the battery's characteristics (wherein those results would have been otherwise affected by surface charge).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to determine if surface charge exists in the device of Gollomp, as did Parsonage, so that more accurate results for the battery's characteristics (i.e. voltage level and SOC) could be calculated after the surface charge was gone/removed.

With respect to claim 134, Gollomp does not expressly disclose wherein the microprocessor prompts an operator to turn on headlights of the vehicle based upon a surface charge determination. Although, Parsonage does disclose the surface charge determination as seen in the rejection of claim 26 above. Furthermore, it is well known in the art that turning on a load such as a headlight is an efficient and quick way to remove the surface charge of a vehicle battery.

Roberts discloses wherein the microprocessor prompts an operator to turn on headlights of the vehicle (col 18 ln 60 to col 19 ln 32), in order to place the starting/charging system in a medium load or low idle condition, which provides the proper state for certain types of testing on the vehicle (to give the most accurate measurements/results).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the microprocessor prompt the operator to turn on headlights based upon a surface charge determination in the device of Gollomp, as did Roberts and Parsonage, so that the proper state for testing can be attained which would give the most accurate measurements and results, which would help properly diagnose the system.

4. Claim 141 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gollomp (US 6,424,157) and Roberts (US 6,570,385), and further in view of Cook (US 4,637,359).

With respect to claim 141, Gollomp does not expressly disclose wherein the microprocessor is adapted to receive an input indicating that the vehicle contains a diesel engine and wherein it waits for glow plugs of the engine to warm up.

Cook discloses wherein a microprocessor is adapted to receive an input indicating that the vehicle contains a diesel engine and wherein it waits for glow plugs of the engine to warm up (col 11 ln 4-20), in order to provide a tester that is compatible with a different vehicle type and so that the engine can be properly prepared for testing/start-up.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to adapt the microprocessor to receive an input indicating that the vehicle contains a diesel engine and wherein it waits for glow plugs of the engine to warm up in the device of Gollomp, as

did Cook, so that a testing device could be provided which would have a more widespread usage (i.e. compatible with different engine/vehicle types) and wherein the vehicle would be allowed to properly prepare for a testing condition (i.e. start-up).

Response to Arguments

5. Applicant's arguments filed September 19, 2011 have been fully considered but they are not persuasive.

With respect to the claims, the applicant argues that Gollomp does not prompt an operator to input information related to a battery under test using an input. The applicant further argues that Gollomp does not provide "a charge battery" output, "a cranking voltage low" output, or "a cranking voltage normal" output.

The examiner respectfully disagrees for the following reasons: As noted in the previous office action, please note that the citation provided for Gollomp (col 7 ln 63 to col 8 ln 5) mentions that if the data is not already in computer storage, it can be entered; hence, this would include user operation which would at least implicitly have prompts for entering the data (even a flashing cursor on a computer screen is considered a prompt). Furthermore, the Roberts reference clearly shows prompting the user for various inputs in Fig. 11A-D and 12, where the motivation for combining such a feature is listed in the rejections above. Concerning the outputs, the citations provided in the rejections above concerning Gollomp are still seen as meeting those requirements, especially when noting the messages provided by the display in Gollomp and their equivalent meaning (i.e. equivalent to the meaning of the outputs in the currently presented claim language). To clarify, the claim language does not specify/require a particular text-based read-

out or phrase. And even if it did, it is not clear how Gollomp's display messages would not show the same information (at least in an equivalent manner). For example, Gollomp includes messages such as "Battery Has a Low SoC and the Alternator Should be Checked", "Battery Needs a Recharge, and Alternator and Alternator Belt Should be Checked", "Battery May be Losing Charge", "Battery Might Not be Able to Start the Engine", "Start Failure and Battery Losing Charge – Turn Ignition Off", "Time Remaining Before Battery Loss", to name a few. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON PIGGUSH whose telephone number is (571)272-5978. The examiner can normally be reached on Monday-Friday 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on 571-272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edward Tso/
Primary Examiner, Art Unit 2858

/A. P./
Examiner, Art Unit 2858